Appellant: Won-Joon Choi et al.

Assignee: Atheros Communications, Inc.

Title: Spur Mitigation Techniques

Serial No.:   10/664,792   File Date: September 16, 2003

Examiner: Jason M. Perilla   Art Unit: 2611

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REPLY BRIEF

In pages 5-6 of the Examiner's Answer, the Examiner states that Dollard teaches that each client performs an independent analysis of usable subcarriers and therefore a determination of usable subcarriers for either C1 or C2 is based solely on analysis performed at C1 or C2, respectively. The Examiner then concludes that each "communications device C1 and C2 of Dollard is ready for immediate data communication only upon determining which subcarriers are unsuitable in their own respective proximities."

Appellant respectfully traverses this conclusion. In reference to Fig. 3, Dollard, col. 8, lines 13-34, explicitly teaches (emphasis added):

> C2 will receive the bitmap and analyze the
> received data to identify which of the sub-carriers is
> unsuitable for C1 (step 60). In addition, C2 analyzes
> its own noise conditions to determine which sub-

carriers are unsuitable die [sic] to interference in proximity to C2 (steps 60-64). **A new bitmap is generated which is indicative of which sub-carriers are suitable and unsuitable for both C1 and C2** (step 66). If the new bitmap is identical to the one received by C2, then only an acknowledge signal needs to be sent to C1 using the agreed upon set of sub-carriers (step 66). If a different bitmap is generated, it is then transmitted by C2 to C1 in the same manner as the first bitmap was transmitted from C1 to C2, as described above. In this regard, **the two devices have agreed on which sub-carriers to use for communication based on the interference detected at both devices.** As indicated above, some of the sub-carriers that are suitable for communication with C1 may have been unsuitable for communication with C2, due to interference in proximity to C2. **C1 uses the modified bitmap it received from C2 to identify which sub-carriers to communicate with C2 (steps 68-72), and can thus commence a data transmission to C2 (step 74).**

In page 7 of the Examiner's Answer, the Examiner argues that Dollard is only concerned with what sub-carriers are usable or unusable for reception. From this "common understanding", the Examiner concludes that neither "C1 nor C2 is concerned with what sub-carriers are usable or unusable for transmission because transmission is not dependent upon any interference present." Applicant respectfully traverses this characterization.

Dollard describes a method "for selecting sub-carrier frequencies for communication between at least two communication devices." Col. 2, lines 56-58. Indeed, Dollard shows that step 74 of Fig. 3, which transmits data packets to C2, also marks the beginning of "Commence Data Communication". Therefore, the Examiner's statement that, "when the determination of the usable sub-carriers for C1 is completed (i.e. at step 54) the generation of a pilot mask for immediate data communication use in the receiver (i.e. C1) based solely on analysis at the receiver is completed" is incorrect. C1 is not ready for data

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communication with C2 until after receipt of the analysis (i.e. the bitmap) generated by C2 (step 68) and a determination of which sub-carriers are suitable and unsuitable for both C1 and C2. Col. 8, lines 18-20.

In the last sentence of page 7 of the Examiner's Answer, the Examiner states:

> Dollard discloses two halves of a two-way communications embodiment while the instant application claims only one half.

Appellant respectfully traverses this characterization. Specifically, in the recited method, the pilot mask used for data communication can be generated based only on analysis at the receiver. Notably, once generated, this pilot mask can immediately be used for data communication without input from another communication device. Therefore, Appellant's method is more efficient than either Logvinov or Dollard, both of which teach techniques that use analysis from a transmitter and a receiver.

In page 8 of the Examiner's Answer, the Examiner states:

> It would have been obvious to one having ordinary skill in the art at the time which the invention was made that the determination of Dollard's unusable subcarriers at C2 could be omitted while the remainder of Dollard's disclosure remained exactly the same.

Appellant traverses this characterization. Specifically, there is nothing in Dollard that teaches or suggests such a modification. Therefore, the Examiner's characterization is based solely on hindsight.

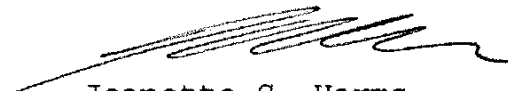In page 8 of the Examiner's Answer, the Examiner further states:

> The Applicant erroneously concludes that one skilled in the art would automatically apply the entirety of Dollard to modify Logvinov. However, the combination of references applied by the Examiner

never suggested as much. Rather, taking into consideration the exclusiveness of the generation of the pilot mask or bit map of each of Dollard's communication devices C1 and C2 as outlined above, it would have been obvious to incorporate only one half of Dollard's full embodiment to arrive precisely at the claimed invention. The combination of the references in such a manner is well within the ability of one having ordinary skill in the art and would produce an operable combination with only expected, predictable results.

Appellant respectfully traverses these characterizations. Dollard believes that his technique, which relies on information exchange between the transmitter and the receiver, provides distinct advantages in improved interference rejection, robustness, and data throughput. Col. 4, lines 14-28. Appellant respectfully submits that the Examiner cannot pick and choose an individual step of a technique while ignoring the actual technique taught by Dollard. Indeed, removing the dual analysis aspect of the technique taught by Dollard effectively destroys the technique of Dollard. Therefore, Appellant submits it would not be obvious to use only one step from Dollard, thereby rendering Dollard's technique ineffective, and combining this single step with Logvinov.

For the foregoing reasons, it is submitted that the Examiner's rejections of Claims 1-6 are erroneous, and reversal of these rejections is respectfully requested.

Respectfully submitted,

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